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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,194	01/16/2002	Guangping Gao	GNVPN.037BUSA	4076

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EXAMINER	
BURKHART, MICHAEL D	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SM -

Office Action Summary	Application No.	Applicant(s)	
	10/053,194	GAO ET AL.	
	Examiner	Art Unit	
	Michael D. Burkhart	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *10-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/16/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/15/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I (claims 1-9) in the reply filed on 6/21/2004 is acknowledged. The traversal is on the ground(s) that there would be no search burden on the Examiner by searching all groups together. This is not found persuasive because the groups of the restriction would require a burdensome search, as evidenced by their distinct classification. Furthermore, the groups are patentably distinct. The cell line product of group I could be used in a materially different process than those listed in groups II and III, such as a source of adenoviral E1 proteins for purification purposes. The two method groups are patentably distinct because, as stated in the original restriction requirement, they involve different steps and utilize different products. Group II requires transfection of a cell with a plasmid encoding an E1-defective adenovirus to produce (or package) an E1-defective adenovirus particle. Group II requires infection of E1-complementing cells with E1-defective adenoviruses and passaging said adenoviruses in the cells. The plasmid of group II is not used in the method of group III and the infecting adenovirus of group III is not used in the method of group II.

The requirement is still deemed proper and is therefore made FINAL.

Priority

This application, filed 1/16/2002, is a CON of 09/659,203, filed 9/11/2000 and now US Patent 6,365,394, which claims benefit of provisional application 60/156,644, filed 9/29/1999. The instant invention is granted a priority date of 9/29/1999.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The invention appears to employ novel biological materials, specifically the GH364, GH354, and GH329 cell lines deposited as ATCC NOs. PTA-3405, PTA-3404, and PTA-803, respectively. Since the biological materials are essential to the claimed invention they must be obtainable by a repeatable method set forth in the specification or otherwise readily available to the public. If the biological materials are not so obtainable or available, a deposit of the biological materials may satisfy the requirements of 35 U.S.C. § 112. The specification does not disclose a repeatable process to obtain the biological material and it is not apparent if the biological materials are readily available to the public. It is noted that Applicant has deposited the biological materials (p. 4-5 of the specification), but there is no indication in the specification as to public availability. If the deposit is made under the Budapest Treaty, then an affidavit or declaration by Applicant, or a statement by an attorney of record over his or her signature and registration number, stating that the specific biological materials have been deposited under the Budapest Treaty and that the biological materials will be irrevocably and without restriction or condition released to the public upon an issuance of patent, would satisfy the deposit requirement made herein. If the deposit has not been made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 C.F.R. §§ 1.801-1.809, Applicant may provide an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

(a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;

(b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

(c) the deposit will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;

(d) a test of the viability of the biological material at the time of deposit will be made (see 37 C.F.R. §§ 1.807); and

(e) the deposit will be replaced if it should ever become unviable.

Applicant's attention is directed to M.P.E.P. § 2400 in general, and specifically to §2411.05, as well as 37 C.F.R. § 1.809(d), wherein it is set forth that "the specification shall contain the accession number for the deposit, the date of the deposit, the name and address of the depository, and a description of the deposited material sufficient to specifically identify it and to permit examination." The specification should be amended to include this information, however, Applicant is cautioned to avoid the entry of new matter into the specification by adding any other information. Finally, Applicant is advised that the address for the ATCC has recently changed, and that the new address should appear in the specification. The new address is:

American Type Culture Collection
10801 University Boulevard
Manassas, VA 20110-2209

Claims 1 and 3-7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for HeLa-based cell lines, does not reasonably provide enablement for any aneuploid cell line. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The test of enablement is whether one skilled in the art could make and use the claimed invention from the disclosures in the application coupled with information known in the art without undue experimentation (*United States v. Telectronics,* Inc. 8 USPQD2d 1217 (Fed. Cir. 1988)). Whether undue experimentation is required is a conclusion reached by weighing several factors. These factors were outlined in *Ex parte Forman*, 230 USPQ 546 (Bd. Pat. App. & Inter. 1986) and again in *In re Wands*, 8 USPQQ2d 1400 (Fed. Cir. 1988) and include the following:

Unpredictability of the art. The art concerning transformation of aneuploid cells with adenovirus DNA sequences and their subsequent use to complement defective adenoviruses is highly unpredictable. Imler et al. (cited by applicants, reference AY) teaches that the production of such a cell line is unpredictable (see first paragraph of discussion, pgs. 79-80). Imler et al. chose A549 and Vero cells for stable transfection by adenovirus E1 expression plasmids, but only the A549 cells could be stably transfected (see last paragraph, p. 76). This establishes that not all aneuploid cell lines can be transformed with adenovirus sequences, let alone be used to complement defective adenoviruses once transformed.

State of the art. The state of the art regarding the production of aneuploid cells transformed with adenovirus DNA which complement defective adenoviruses is poorly developed. The development of such aneuploid cells would have to be done empirically, along with the development of the appropriate adenovirus vectors.

Number of working examples. Applicants have provided no working examples of aneuploid, non-Hela cells transformed with adenovirus DNA sequences that complement defective adenoviruses. The specification teaches only one aneuploid cell line, HeLa, that produces stably transformed cells with the claimed characteristics.

Amount of guidance. Applicants provide no direction for the production of non-HeLa, aneuploid cell lines that complement defective adenovirus. The specification requires the skilled artisan to practice trial and error experimentation with different aneuploid cell lines and adenoviral vectors to determine which (if any) will be compatible as claimed.

Scope of the invention. The claims are broad in nature and read on any aneuploid cell line.

Nature of the invention. The invention involves the unpredictable art of producing aneuploid cell lines capable of complementing defective adenoviruses.

Level of skill in the art. While the level of skill in the art is high, the unpredictability of the art, lack of guidance, broad scope of the claims and poorly developed state of the art would require that undue and excessive experimentation would have to be conducted by the skilled artisan in order to practice the claimed invention. One skilled in the art would also have reason to doubt that all aneuploid cell lines would be capable of producing the claimed cell line.

Given the above analysis of the factors which the courts have determined are critical in determining whether a claimed invention is enabled, it must be considered that undue and excessive experimentation would have to be conducted by the skilled artisan in order to practice the claimed invention.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9, 12 and 21 of U.S. Patent No. 6,365,394 (' 394 hereafter, cited by applicants). Although the conflicting claims are not identical, they are not patentably distinct from each other because the cell line of the instant claims is rendered obvious by the cell line recited in the '394 patent. The instant claims recite an aneuploid E1-complementing cell line that produces E1-defective adenoviruses in the absence of detectable replication-competent adenovirus. The cell line is transformed with nucleic acid sequences encoding adenovirus E1a and E1b proteins under control of the PGK promoter. The adenovirus sequences 5' to the E1 encoding sequences are deleted. The cell line may be HeLa, the nucleic acid sequences may contain the pIX gene region, may be a plasmid vector, and may comprise multiple copies of the E1a and E1b sequences. The cell line may contain multiple copies of the nucleic acid sequence, which may encode E1a and E1b sequences independently selected from adenovirus type 5, and the cell line may be GH364, GH354, or GH329. Claims 1-9, 12 and 21 of the '394 patent recite a cell line and methods with identical limitations. Therefore, the claims of the '394 patent anticipate the instant claims.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Burkhart whose telephone number is (571) 272-2915. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel can be reached on (571) 272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael D. Burkhart
Examiner
Art Unit 1636

DAVID GUZO
PRIMARY EXAMINER